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THE TERRA DEL FUEGIANS AT THE GARDEN OF ACCLIMATION.

The whole world has heard of the savages, who are at present exhibited at the Zoological Garden of Acclimation of Bois de Boulogne; many have gone to see them, and have been well repaid, for they present an interesting spectacle to the observer. They are seen lying or squatting about the fire kindled under the trees of the large lawn, motionless for whole hours at a time, gazing with vacant eye at the astonished crowd which presses against the railings as though they contained remarkable animals. Do they think? We cannot tell this. Do they speak? Yes, they do speak, if we can call the guttural sounds, the cluckings which at long intervals, they exchange with each other, a language. They remain there, indifferent, having no longer in operation the only cause which can agitate them, hunger; for they are fed. It is a curious sight, but also a sad one. A man at this stage of brutishness is not wholly an animal; but he is no longer a man. The Fuegians, for that is the name which Captain Weddel gave them in 1822, and which has been applied to them since that time, inhabit Terra del Fuego. When we read in the works of travelers the description of their country, we are no longer astonished at their profound degradation.

Terra del Fuego is a mountainous archipelago, separated from Patagonia by the straits of Magellan, and formed of enormous masses of steep rocks, which leave only the coast bordering upon the straits, upon which man can settle. In the parts where the rock is not absolutely bare, a thick and impenetrable forest of beeches covers the side of the mountain, and descends as far as the sea. No animal, with the exception of some foxes and birds, inhabits this country. The climate here is horrible. The mean temperature of summer, according to King and Darwin, is 10°C., and that of winter 0.6°C. Mist is perpetual here, and tempests unceasing. Scarcely a day passes without the fall of rain, and even of snow. The habitable portion is only on the rocks of the shore. In the whole country, but a few acres of plain can be found.

For a long time these Fuegians have been known, and many descriptions of them have been given. Sebald, of Weert, who accompanied Simon, of Cord, made giants of them, eleven to twelve feet high. We see from the samples which we have under our eyes, that there is a certain exaggeration in that statement. We borrow from Orbigny the description which he gives of them; in our opinion, there is nothing to be changed in it; it is absolutely applicable to our savages.

Their head, says Orbigny, is tolerably large, their face is rounded; they have a short nose, a little broadened, open nostrils, small eyes, black and horizontal; a large mouth, thick lips, white teeth, well arranged; small ears, and the cheek bones a little prominent. They have but little beard, and this they pluck out. Their hair, like that of all the Americans, is black, long, and dull. Their body is massive, their chest large, and their bow-legs are relatively rather short. The women present the same characteristics as the men, and they will return with difficulty to the proportions exacted by European æsthetics. Their mean height is from 1.56 m., to 1.68 m.

Their language, as we have before stated, is guttural, and it has been compared by Cook to the utterance of a man who is gargling. This comparison expresses well the impression that is felt on hearing them.

The great naturalist, Charles Darwin, was able, during the many months which he passed in the country which they inhabit, to observe their habits, and he has given us a picture which, in order to be just, is not very attractive: it is from him that we borrow the particulars which follow. "Forced continually to move from one region to another, according as the resources of their settlement are exhausted, the Fuegians have no fixed abode.

They construct a sort of hut by planting several branches in the ground and covering them with other branches intertwined on the side where the wind blows. Their dress consists of a piece of skin, which they carry over their shoulders, and which they pass from one shoulder to the other, according to the direction of the wind. It was necessary for ceremony to persuade the Fuegians at the Garden of Acclimation to put on a pair of drawers. Often they are completely nude. Their nourishment consists chiefly of shell-fish, and now and then of the rotten flesh of a seal or of a whale. At low tide, which may be in winter or in summer, in the night or in the day, they must get up to seek the shell-fish on the rocks; the women dive to obtain the eggs from the sea or remain patiently seated in their boats for several hours until they have caught several small fish with lines without hooks. If they happen to kill a seal, or if they happen to discover the half-rotten carcass of a whale, it is the signal for an immense feast. They then gorge themselves with the horrible food, and, to complete the feast, they eat several berries or several mushrooms which have no taste."

When the different tribes go to war they become cannibals. Besides, when in winter they are strongly pressed by hunger, they eat the old women before they do the dogs, because, they say, the latter capture otters, and the old women cannot. In this regard, it is to be regretted that they did not bring some of their dogs with them. The only domestic animals of these savages ought certainly to present a precious subject of observation.

Do these savages believe in another life, have they any rudimentary religion whatever? We are not able to pronounce on this, for it is impossible to draw any explanation from the savages themselves; they are incapable of comprehending an alternative, and we can never surely know if we understand them ourselves. All that we can say is, that each tribe or family possesses a magician whose functions have not yet been exactly defined by travelers, and that the Fuegians generally bury their dead.

It has been pretended that the family tie does not exist among them. Yet, we see in the account of Darwin that York Minster, one of the Fuegians brought back by Captain Fitz-Roy to his country, took as his wife the young girl who had accompanied him to Europe, and that the other returned Fuegian also had his wife when the expedition returned to the place inhabited by the tribe with which he had been left. Is not this a proof of the existence of a family relation, rudimentary if you wish, yet a real home among these savages.

As regards property, it is an unknown thing among them. Apart from arms and utensils, no Fuegian possesses anything of his own. If he kills a seal, it is shared among all the members of the tribe. If a present is made to one of them, he breaks it and divides the pieces. It is communism in all its beauty.

The different tribes have neither government nor chief. Each of them is, however, surrounded by other hostile tribes speaking different dialects. They are separated, the one from the other, by a neutral territory which remains absolutely deserted. The perpetual wars which these tribes have, seem to have for a cause the difficulty of obtaining food. The land is so steep that they cannot change their abode except by water; and necessity has forced them to become navigators and to build boats. Those who inhabit the shores of the Straits of Magellan pass, from time to time, into Patagonia to chase the guanacos in order to renew their clothes and their provisions. But even there they encounter enemies. The Patagonians, from whom they are distinguished by race and language, as well as by habits, pursue them with ardor, and seek to reduce them to slavery. A Fuegian slave is very highly estimated by the Patagonians, who value him among themselves, according to the quality, up to \$200.

When we consider the few resources which the archi



INHABITANTS OF TERRA DEL FUEGO AT THE GARDEN OF ACCLIMATION IN PARIS (AFTER A PHOTOGRAPH BY PIERRE PETIT).

pelago of Terra del Fuego offers for the existence of man, even compared to the neighboring regions on the American continent, we ask what cause has persuaded the Fuegians to establish themselves there. To-day it is beyond doubt that these people are not negroes, as Bory Saint-Vincent believed, but that they belong to an Ando-Peruvian race which inhabits the Andes and a part of the pampas of Chili. They probably occupied, in olden times, the northern banks of the straits of Magellan, and are but a remnant of the Aucas and the Araucanos of Chili. Attacked by the Patagonians of the pampian race, not as strong and more poorly armed than their adversaries, they were obliged, at a time more or less remote, to yield the place to their redoubtable enemies and to take refuge in the inhospitable regions on the other side of the strait, where the Patagonians, detestable navigators, left them in quiet.

Then little by little have acted the forces of adaptation, which all-powerful habit, in returning their hereditary effects, have adapted the Fuegians to the climate and productions of their miserable country.

Their industry is modified in the same way, and to-day it is reduced to the construction of miserable boats, and to the manufacture of several weapons and utensils necessary to their sad existence. The boat built of a mass of shapeless pieces of wood, covered with canvas in the shape of the skins which they customarily employ, the boat which can be seen on the basin in the neighborhood of their enclosure, makes us shudder when we think that these savages venture in this frail machine on the agitated waters which wash their country. In regard to the collection of arms and utensils which can be seen in a neighboring shed, it indicates a certain ingenuity, but shows well to what a miserable condition these poor creatures are reduced.

These Fuegians, eleven in number, four men, four women, and three children, have been brought to Europe by M. Waalen, established for many years at Punta-Arenas, capital of Patagonia.

M. Waalen, who goes to fish for seals in the waters of Terra del Fuego, finds himself in connection with these savages. He was able, by gorging them with food, by treating them with prudence, for they are not always tractable and would be able to cause great obstructions, to induce them to remain on his ship, from which they were transhipped on a Hamburg steamer which makes the passage between Valparaiso and Europe. It was while the ship touched at Havre that M. Geoffroy Saint-Hilaire, informed by a despatch, saw them and brought them here. M. Waalen deposited in the hands of the Chilean Governor of Punta-Arenas, a sum of 12 to 15,000 francs, as security, binding himself to return these savages to their country after they had made a tour through the principal capitals of Europe.

What impression will they carry back of their sojourn among civilized people? If we are to judge of this by the Fuegians that Captain Fitz-Roy returned after a sojourn of three years in Europe, the impression will be a very fleeting one. These natives, three in number, two men, York Minster and Jemmy Button, and a young girl, Fuégia, seemed almost entirely civilized. Captain Fitz-Roy landed them in the middle of their tribes, furnished them with implements and tools of all sorts, built them a house, cleared up a corner of ground, and left them in the company of a missionary. When he returned, several months after, he found no trace of their installment, and had to take on board the poor missionaries, who ran the greatest danger. Of his three pioneers, two, York Minster and Fuégia who became his wife, parted in plundering their comrade, and the latter, who had taken a wife in his tribe, became a filthy and disgusting savage, delighted with his condition, scarcely knowing how to speak English, and who showed with pride to the officers of the expedition the implements of bone and of flint which he had manufactured.

It seems, after this experience, that it is impossible to draw these savages from their debasement, and yet they have an intellectual capacity, latent, it is true, which appears superior to that of Australians. They learn languages with remarkable facility, and have a spirit of imitation carried to extremes, which ought to be utilized in order to teach them things well. The future will tell us if those who are at present in the Garden of Acclimation, will derive any profit from their sojourn among us. Our opinion is that they will be delighted at finding themselves in their own homes, and the remembrance of all that they will have seen will remain in their minds as a dream which will not perhaps be wholly agreeable.—(*Translated from La Nature.*)

ON A NEW SYSTEM OF BLOWPIPE ANALYSIS.*

BY LIEUT.-COLONEL W. A. ROSS (late R. A.)

(I) THE USE OF ALUMINIUM PLATE FOR VOLATILIZING SUBSTANCES.

Volatile metals and sulphur compounds, &c., are, in the old system, treated before the blowpipe, as is well known, upon the support of a parallelopiped of charcoal held horizontally in the direction of the blast from the blowpipe, the disadvantages of which are: (a) that *black* sublimates as those now known to be obtainable from arsenic, antimony, lead, &c., are undistinguishable on the black charcoal. (b) The greater part of the sublimate from most volatile metals is blown away by the blast—a serious objection when, as is often the case, there is only a trifling proportion of such metals present in a mineral or compound. (c) When the charcoal becomes incandescent, the most interesting portion of the sublimate (that next the assay) is often thus resublimed and lost. (d) The white charcoal ash is so mixed up with sublimates as often to conceal them, and, in cases of minute quantities, to mislead the operator into supposing there is a sublimate at all. (e) In the treatment of a compound containing two or more volatile metals, sulphides, or oxides, the sublimates obtained therefrom are mechanically, and perhaps sometimes chemically, combined, and then cannot be separated, so as to be distinguished from each other, by means of the blowpipe, or in any other way at the time, on the spot. (f) It is impossible to obtain a blowpipe sublimate from charcoal free from the silica, &c., of the ash, by scraping it off for supplementary examination. (g) Most charcoals, after blowpipe treatment for any length of time, split up in cracks and deep fissures, into which the sublimate or the assay falls and is lost.

Here are several objections to the use of charcoal as a blowpipe support; most of them serious, some fatal to a thorough pyrological examination of volatile substances; and yet it has obtained ever since Von Swab invented the chemical employment of the blowpipe in 1738 (in which year he thus treated an ore of zinc at Delarne in Sweden), and is still used at Freiberg.

In 1869 Napoleon III had offered, or I understood him to have offered, a premium of £1000 to any one who could discover an efficient solder for aluminium, and being then on sick-leave in India, I thought of employing my leisure in attempting this discovery.†

After investigation, I imagined (from burning my fingers so often), that the reason an aluminium solder could not be made, was the enormous heat-conducting powers of the metal, which transferred the heat from a blowpipe-flame so quickly away over the entire substance of a fragment of given bulk, that no one part of it could

*British Association, York, 1881.

† In reply to a question, Col. Ross answered that he had not discovered a new solder, but that on one occasion last year (1880) he actually did succeed in soldering two small pieces of aluminium together, and that he has a description of the process in his notes.